

AUTOLOGOUS STEM CELL TRANSPLANTATION FOR RELAPSED / REFRACTORY HODGKIN LYMPHOMA IN A RESOURCE-LIMITED SETTING: A REAL-WORLD STUDY FROM PAKISTAN

Hammad Javed¹, Jahanzeb Rahman¹, Tariq Ghafoor¹, Nighat Shahbaz¹, Mehreen Ali Khan¹, Raheel Iftikhar¹

¹Armed Forces Bone Marrow Transplant Centre, Rawalpindi, Punjab, Pakistan



CONTEXT

Management of relapsed or refractory classical Hodgkin lymphoma (RR-cHL) remains challenging in low- and middle-income countries (LMICs) due to limited access to advanced diagnostic facilities and novel therapies. High-dose therapy (HDT) followed by autologous stem cell transplantation (ASCT) remains the standard of care for chemo sensitive disease; however, real-world data from LMICs are limited.

OBJECTIVE

To evaluate real-world outcomes of ASCT in patients with RR-cHL in a resource-limited setting and to identify prognostic factors associated with survival outcomes.

DESIGN

Retrospective cohort study of consecutive patients with RR-cHL undergoing ASCT between January 2010 and December 2023, with survival analysis performed using the Kaplan–Meier method and Cox proportional hazards modeling.

PATIENTS OR OTHER PARTICIPANTS

A total of 60 consecutive patients with RR-cHL were included. Median age was 26 years (IQR, 16.1–32.3), and 66.7% were male. At diagnosis, 79% had advanced-stage disease and 63% had B symptoms. High-risk features included primary refractory disease (23.3%) and early relapse (41.6%).

CONCLUSIONS

In this real-world LMIC setting, ASCT for RR-cHL is feasible and yields survival outcomes comparable to international benchmarks despite resource constraints. Achieving remission prior to transplantation remains a key determinant of outcomes. These findings support the continued role of ASCT and highlight the need to improve access to effective salvage therapies in resource-limited settings.

RESULTS

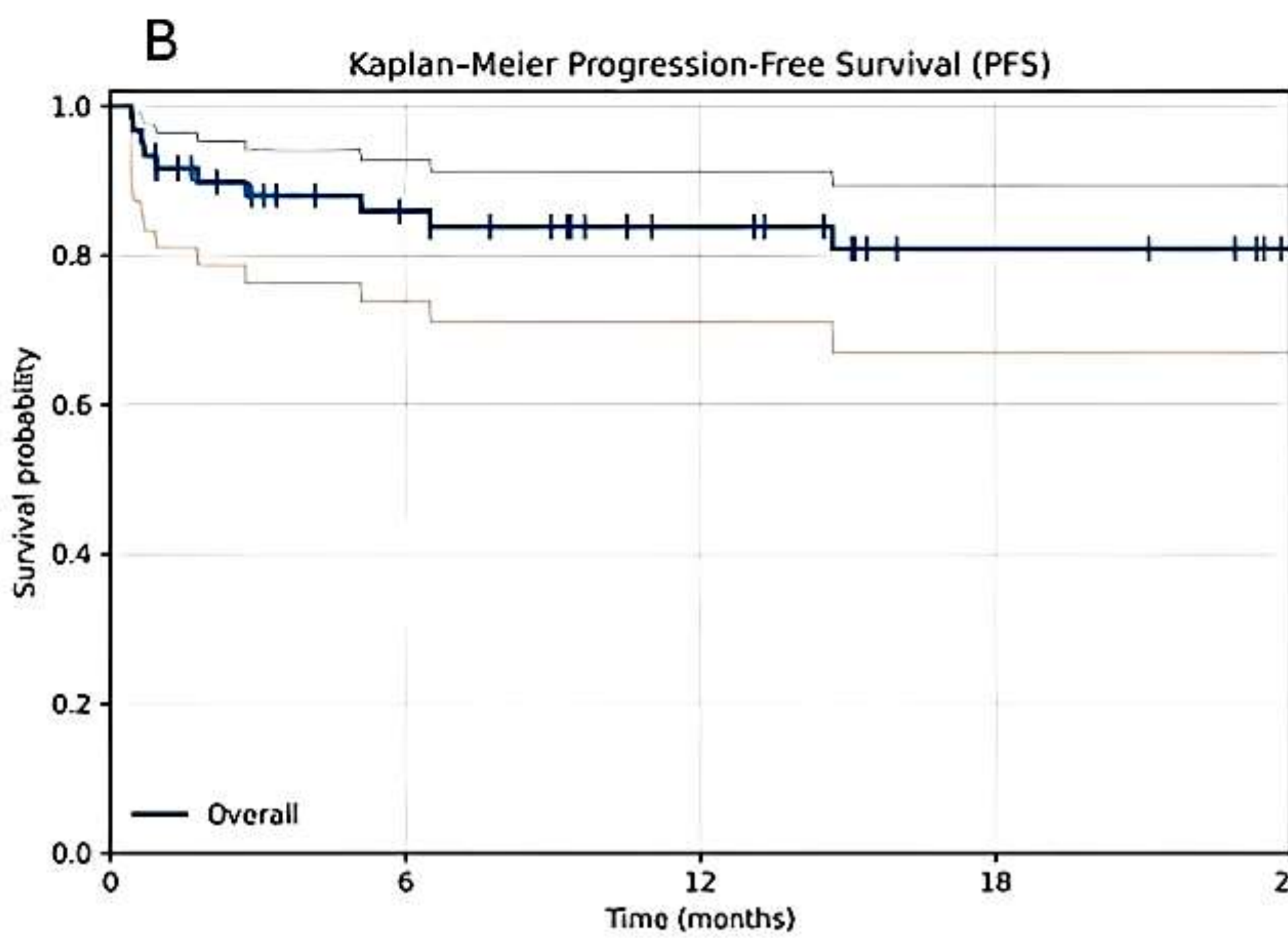
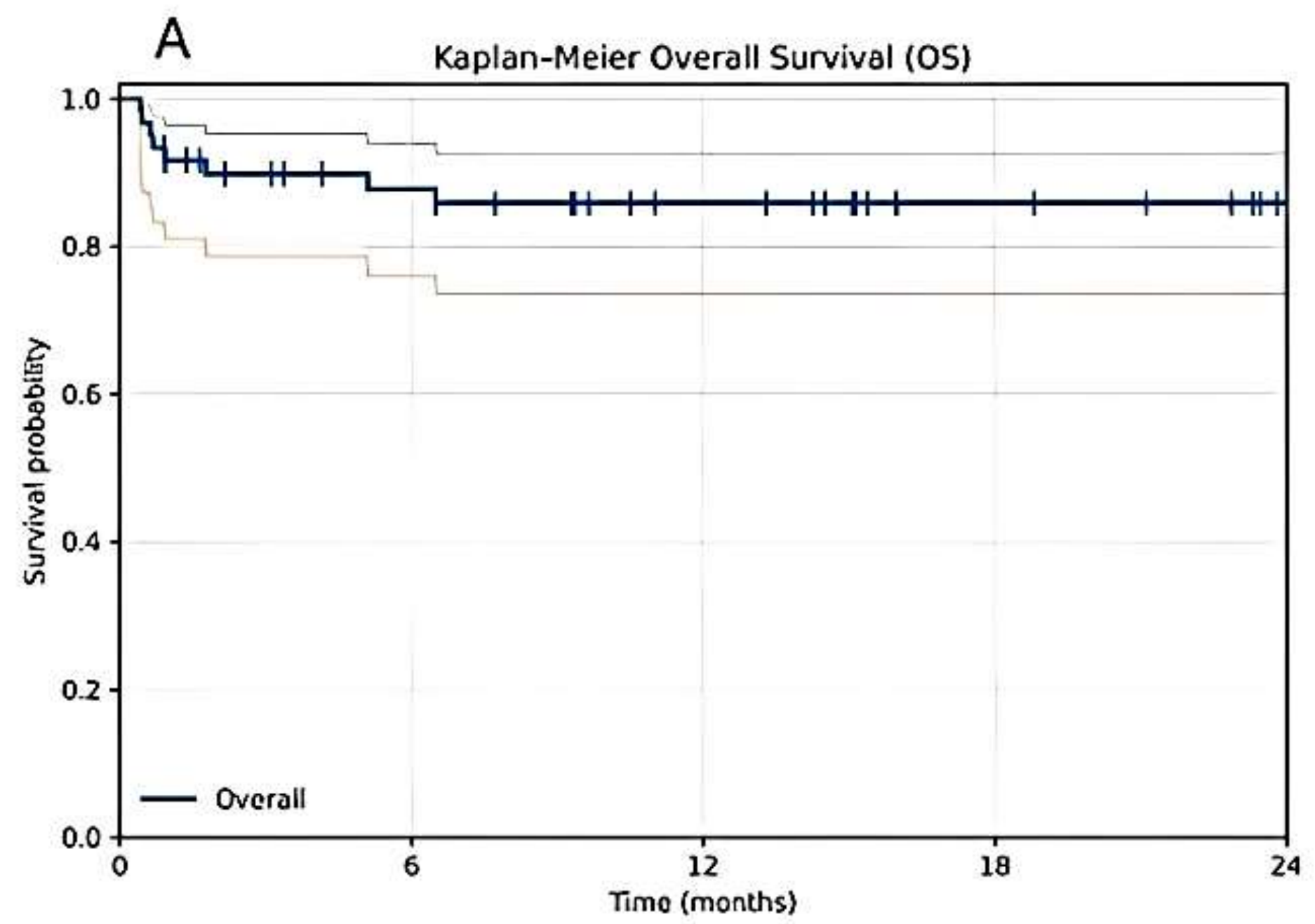
At a median follow-up of 21.1 months, the estimated 2-year PFS was 80.9% (95% CI, 66.9–89.4) and OS was 85.8% (95% CI, 73.5–92.7). The 2-year cumulative incidence of relapse was 19.1%, and day +100 non-relapse mortality was 5%. On multivariable analysis, primary refractory disease was independently associated with inferior PFS (HR 4.89, $P = .002$) and OS (HR 4.21, $P = .027$).

Overall Survival, univariate analysis			
Variable	HR	95% CI	P value
Age (continuous)	1.04	0.98–1.11	0.19
Male sex	1.32	0.41–4.29	0.64
Advanced stage (III–IV)	2.21	0.67–7.31	0.19
B symptoms	2.89	0.91–9.19	0.07
Bulky disease	1.76	0.54–5.74	0.35
Primary refractory disease	4.98	1.52–16.30	0.008

Disease free survival; univariate analysis				
Variable	HR	95% CI	P value	
Age (continuous)	1.03	0.99–1.07	0.11	
Male sex	1.21	0.47–3.11	0.69	
Advanced stage (III–IV)	2.84	1.09–7.38	0.032	
B symptoms	3.12	1.26–7.70	0.014	
Bulky disease	2.09	0.82–5.31	0.12	
Primary refractory disease	5.67	2.11–15.25	< 0.001	

Overall survival, multivariate analysis			
Variable	Adjusted HR	95% CI	P value
B symptoms	2.41	0.69–8.38	0.17
Primary refractory disease	4.21	1.18–15.05	0.027

Disease free survival; multivariate analysis			
Variable	Adjusted HR	95% CI	P value
Advanced stage (III–IV)	2.31	0.88–6.09	0.09
B symptoms	2.47	0.95–6.41	0.06
Primary refractory disease	4.89	1.78–13.43	0.002



MAIN OUTCOMES MEASURES

Primary endpoints were progression-free survival (PFS) and overall survival (OS). Secondary outcomes included relapse incidence and non-relapse mortality.

INTERVENTIONS

Patients received salvage chemotherapy, including novel agent-based regimens in 68.3% of cases, followed by high-dose therapy and ASCT. At the time of transplant, 85% of patients were in complete remission.

KEYWORDS

Hodgkin lymphoma, autologous stem cell transplantation, relapsed/refractory, low- and middle-income countries

CONTACT INFORMATION

Hammad Javed

AFBMTc Rawalpindi | hammad2286@gmail.com | +92 334 5294940